(b) In the claims

Cancel claims 1-9.

10. (WITHDRAWN) A method for producing the battery separator of claim 1 which comprises the steps of

(a) preparing a dry blend of between 4wt % and 99 wt % of an ultra high molecular weight polyethylene having an average molecular weight of $1x10^6$ or more and between 1% and 96% of a TiO_2 particulate filler with average particle size diameter of between 0.001μm and 10μm;

(b) mixing the dry blend with between 40wt % and 90 wt % plasticizer in an extruder, forming a solution;

(c) extruding the solution through a film die, creating an extruded film;

(d) calendering the extruded film at between 30°C and 120°C;

(e) removing the plasticizer by the extraction method;

(f) uni-axially or bi-axially stretching the film at between 110°C and 130°C at a stretching ratio of 2 or more in the transverse direction, the machine direction, or both; and

(g) heat-setting the film at between 110°C and 130°C.

11. (WITHDRAWN) A microporous battery separator having a thickness of between 5μm and 175μm, a porosity of between 30wt % and 95 wt %, and an air permeability of between 5 sec/10cc and 200 sec/10cc, said microporous membrane comprising a ultra high molecular weight polyolefin having a minimum average molecular weight of $1x10^6$, a low molecular weight polyethylene with an average molecular weight of between 700

and 4500, and a TiO_2 particulate filler with an average particle size diameter of 0.001 to 10 μm.

12. (WITHDRAWN) A battery separator in accordance with claim 11, wherein said microporous membrane is comprised of between 1wt % and 90 wt % ultra high molecular weight polyethylene, 1wt % and 90 wt % low molecular weight polyethylene and 1wt % and 90 wt % TiO_2.

13. (WITHDRAWN) A battery separator in accordance with claim 11 or 12 having shutdown temperatures of between 95°C and 135°C.

14. (WITHDRAWN) A battery separator in accordance with claim 11 or 12 having melt integrity of 165°C or more.

15. (WITHDRAWN) A battery separator in accordance with claim 11 or 12 having a puncture resistance of more than 300 grams/25μm.

16. (WITHDRAWN) A battery separator in accordance with claim 11 or 12 wherein said separator is used in a non-aqueous electrolyte battery.

17. (WITHDRAWN) A battery separator in accordance with claim 11 or 12 wherein said separator"s surface is treated with a substance chosen from the group consisting of (a) a wetting agent and (b) a hydrophilic grafting agent, for use in an aqueous electrolyte battery.

18. (WITHDRAWN) A method for producing a battery separator which comprises the steps of:

(a) preparing a dry blend of between 1wt % and 90 wt % of an ultra high molecular weight polyethylene having an average molecular weight of $1x10^6$ or more, between 1wt % and 90 wt % low molecular weight polyethylene with average molecular weight of

between 700 and 4500, and between 1 wt % and 96 wt % of a TiO_2 particulate filler with an average particle size diameter of 0.2 μm or less;

(b) mixing the dry blend with between 40wt % and 90 wt % plasticizer in an extruder,

(c) extruding the solution through a sheet die producing an extruded film thereby;

(d) calendering the extruded film at between 70°C and 120°C;

(e) uni-axially or bi-axially stretching the film at between 80°C and 120°C at stretching ratio of 2 or more in the transverse direction, the machine direction, or both;

(f) removing the plasticizer by an extraction method; and

(g) heat-setting the film at between 70°C and 100°C.

19. (WITHDRAWN) A battery which comprises the battery separator in accordance with claim 1.

20. (WITHDRAWN) A battery which comprises the battery separator in accordance with claim 11.

21. (WITHDRAWN) A microporous filter which comprises the microporous membrane in accordance with claim 1.

22. (WITHDRAWN) A microporous filter which comprises the microporous membrane in accordance with claim 11.

23. (NEW) A battery separator comprising a microporous membrane having a thickness of 5 to 175μm, a porosity of between 30% and 95%, and an air permeability of between 1 sec/10cc and 100 sec/10cc, said microporous membrane comprised of between 70% and 95% a ultra high molecular weight polyolefin having a minimum average molecular weight of $1x10^6$, and between 5% and 30% a TiO_2 particulate filler with an average particle size diameter of between 0.001 μm and 1 μm.

24. (NEW) A battery separator comprising a microporous membrane having a thickness of 5 to 175μm, a porosity of between 30% and 95%, and an air permeability of between 1 sec/10cc and 100 sec/10cc, said microporous membrane comprising a blend of between 70% and 95% of two polyethylene polymers (consisting of between 3% and 20 weight % of an ultra high molecular weight polyethylene polymer having an average molecular weight of $2x10^6$ or higher and between 80% and 95 % of polyethylene polymer having an average molecular weight of $1x10^6$ or lower), and 5% to 30% of a TiO_2 particulate filler with an average particle size diameter of between 0.001 μm and 1 μm.

25. (NEW) A battery separator comprising a microporous membrane having a thickness of 5 to 175μm, a porosity of between 30% and 95%, and an air permeability of between 1 sec/10cc and 100 sec/10cc, said microporous membrane comprised between 70% to 95 weight % mixture of two polyethylene polymers (consisting of between 30% and 90 weight % ultra high molecular weight polyethylene having an average molecular weight of $1x10^6$ or higher and between 10% and 50 % low molecular weight polyethylene having an average molecular weight of 4,500 or lower), and between 5% and 30% a TiO_2 particulate filler with an average particle size diameter of between 0.001 μm and 1 μm.

26. (NEW) The battery separator in accordance with claims 23, or 24, or 25, having melt integrity of 165°C or more.

27. (NEW) The battery separator in accordance with claims 23, or 24, or 25, and further having a shutdown temperature of 130 °C plus or minus 20°C.

28. (NEW) The battery separator in accordance with claims 23, or 24, or 25, and further having a puncture resistance of more than 300 grams/25μm.

29. (NEW) The battery separator in accordance with claims 23, or 24, or 25, and further having a thermal shrinkage of 10% or less both in the machine and transverse directions.

30. (NEW) The battery separator in accordance with claims 23, or 24, or 25, wherein said separator is used in a battery containing a non-aqueous (organic) electrolyte solution.

31. (NEW) A membrane in accordance with claims 23, or 24, or 25, wherein said membrane comprises a surface, and said surface is treated with a substance chosen from the group consisting of (a) a wetting agent and (b) a hydrophilic grafting agent.

32. (NEW) A battery separator in accordance with claim 23 wherein said separator has an average pore diameter of between 0.01 μm and 1 μm.

33. (NEW) A battery separator in accordance with claim 24 wherein said separator has an average pore diameter of between 0.01 μm and 2 μm.

34. (NEW) A battery separator in accordance with claim 25 wherein said separator has an average pore diameter of between 0.01 μm and 2 μm.

35. (NEW) A battery which comprises the battery separator in accordance with claims 23, or 24, or 25.

36. (NEW) A filter which comprises the battery separator in accordance with claims 23, or 24, or 25, or 31.